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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/758,036	01/11/2001	Ekkchard Leberer	38005-0126	8288

7590

05/01/2002

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EXAMINER

SANDALS, WILLIAM O

ART UNIT	PAPER NUMBER
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1636

DATE MAILED: 05/01/2002

13

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
09/758,036

Applicant(s)
Leberer et al.

Examiner
William Sandals

Art Unit
1636



-- **Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Feb 21, 2002
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above, claim(s) 11-18 and 22-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 20, and 21 is/are rejected.
- 7) ☒ Claim(s) 4-10 and 19 is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☒ All b) ☐ Some* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- *See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 16) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7, 9, 1C 20) ☐ Other:

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DETAILED ACTION

Election/Restriction

1. Applicant's election without traverse of Group I, claims 1-10 and 19-21 in Paper No. 12, mailed February 21, 2002 is acknowledged.
2. Claims 11-18, 23 and 24 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected Group, there being no allowable generic or linking claim. Election was made without traverse in Paper No. 12.

Priority

3. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

4. New formal drawings are required in this application because recent changes to the MPEP, section 608.02(c) no longer allow deferral of submission of drawings pursuant to notification. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the Patent and Trademark Office no longer prepares new drawings.

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Specification

5. The use of the trademarks Big Dye Terminator and Stratalink have been noted in this application. They should be capitalized wherever they appear and be accompanied by the generic terminology.

Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Claim Objections

6. Claims 4-10 and 19 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim must not depend from another multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims 4-10 and 19 have not been further treated on the merits.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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8. Claims 1-3, 20 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. Claims 1, 20 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting an essential step, such omission does not set forth the method in clear and unambiguous terms. See MPEP § 2172.01. The omitted step is a correlation, or recapitulation step at the end of the claim which restates the preamble, otherwise the claims do not result in what is stated in the preamble.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1-3, 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,795,770 in view of Ketchum et al. and Fairman et al.

The claims are drawn to a process for identifying inhibitors or activators of a eukaryotic potassium channel using mutant *S. cerevisiae* cells with inactivated endogenous potassium channels TRK1, TRK2 and TOK1 and wherein a eukaryotic heterologous potassium channel is expressed in the mutant cell. The inhibitor or activator is added to the mutant cells and the effect

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of the inhibitor or activator is determined. A substance may be added in addition to an activator to determine the effect of the substance on the cells in the presence of the activator.

US 5,795,770 taught (see especially the abstract, summary and columns 4 and 6-7) a process for identifying inhibitors or activators of a eukaryotic potassium channel using mutant *S. cerevisiae* cells with inactivated endogenous potassium channels TRK1 or TRK1 and TRK2 and wherein a eukaryotic heterologous potassium channel is expressed in the mutant cell. The inhibitor or activator is added to the mutant cells and the effect of the inhibitor or activator is determined. A substance may be added in addition to an activator to determine the effect of the substance on the cells in the presence of the activator. US 5,795,770 taught that the beneficial and desirable feature of the mutant *S. cerevisiae* cells was their inability to transport potassium into *S. cerevisiae* cells.

US 5,795,770 did not teach that the mutant *S. cerevisiae* cells were inactivated for TOK1.

Ketchum et al. taught (see especially page 692, column 2) that *S. cerevisiae* cells contained a potassium channel TOK1 which transported potassium out of *S. cerevisiae* cells, and that under certain conditions, also transported potassium into *S. cerevisiae* cells.

Fairman et al. taught (see especially the abstract, the introduction and page 155) that *S. cerevisiae* cells contained a potassium channel, TOK1, which transported potassium out of *S. cerevisiae* cells, and that under certain conditions, also transported potassium into *S. cerevisiae* cells. Fairman et al. taught mutant *S. cerevisiae* cells with inactivated endogenous potassium

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channels TRK1 and TRK2 that also contained a potassium channel TOK1 which transported potassium out of *S. cerevisiae* cells, and that under certain conditions, also transported potassium into *S. cerevisiae* cells.

It would have been obvious to one of ordinary skill in the art at the time of filing the instant application to combine the teachings of US 5,795,770 with Ketchum et al. and Fairman et al. to produce the instant claimed invention because US 5,795,770 taught the mutant *S. cerevisiae* cells should have inactivated endogenous potassium uptake channels.

One of ordinary skill in the art would have been motivated to combine the teachings of US 5,795,770 with Ketchum et al. and Fairman et al. to produce the instant claimed invention because US 5,795,770 taught that the beneficial and desirable feature of the mutant *S. cerevisiae* cells was their inability to transport potassium into *S. cerevisiae* cells. Ketchum et al. and Fairman et al. both taught that TOK1 was a potassium transport channel which was capable of transporting potassium into cells. Therefore, given that TOK1 is a potassium uptake transporter, one of skill in the art would be motivated to inactivate a known potassium uptake transporter in *S. cerevisiae* cells, namely, TOK1 to produce mutant *S. cerevisiae* cells with inactivated endogenous potassium channels TRK1, TRK2 and TOK1 to practice the method of identifying activators and inhibitors of heterologous potassium channel uptake transporters in mutant *S. cerevisiae* cells. Further, a person of ordinary skill in the art would have had a reasonable expectation of success in the producing the instant claimed invention given the teachings of US 5,795,770 with Ketchum et al. and Fairman et al.

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Conclusion

12. Certain papers related to this application are *welcomed* to be submitted to Art Unit 1636 by facsimile transmission. The FAX numbers are (703) 308-4242 and 305-3014. The faxing of such papers must conform with the notices published in the Official Gazette, 1156 OG 61 (November 16, 1993) and 1157 OG 94 (December 28, 1993) (see 37 CFR 1.6(d)). NOTE: If applicant *does* submit a paper by FAX, the original copy should be retained by the applicant or applicant's representative, and the FAX receipt from your FAX machine is proof of delivery. NO DUPLICATE COPIES SHOULD BE SUBMITTED, so as to avoid the processing of duplicate papers in the Office.

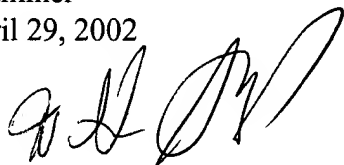
Any inquiry concerning this communication or earlier communications should be directed to Dr. William Sandals whose telephone number is (703) 305-1982. The examiner normally can be reached Monday through Thursday from 8:30 AM to 7:00 PM, EST. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Remy Yucel can be reached at (703) 305-1998.

Any inquiry of a general nature or relating to the status of this application should be directed to the Zeta Adams, whose telephone number is (703) 305-3291.

William Sandals, Ph.D.

Examiner

April 29, 2002

A handwritten signature in black ink, appearing to be 'W. Sandals', written over the typed name and date.